**Project Subject/Title: Willow Flowage Prescribed Burn**
**County: Oneida**
**TRS: T37N 5E Sec.8**
**Contact Person: Tom Shockley**
**Type: Prescribe Burn**
**Year Initiated: 2002**

**Abstract/Prescription:**
A 33 acre prescribed burn was conducted on the Willow Flowage on May 2002. Burn objectives were to reduce the shrub and hardwood competition, reduce the duff layer to prepare seedbed for pine regeneration. Seven permanent plots (1/5 ac) were established in August. Measurements include BA, DBH, scorch height, % mortality of veg,% duff removed, % sprouting. The Behave program was implemented before the burn in order to assess the adequacy of the burning conditions. Monitoring is ongoing.

**Results:**
- 90% mortality of hazel and 20% mortality of hardwood.
- less than 15% duff removed.
- some existing pine regeneration mortality.
- The fire burned hot and slow.

**Discussion/Recommendations:**
- Burn areas with higher hardwood density when condition are optimum ( low humidity, stronger wind, late morning).
- Conversely, in areas with pine regeneration burn when conditions are a little less than optimal.

**Site statistics:**
- Burn stats: dry/wet bulb = 66/56, RH=23, windspeed 3-5mph, wind direction NW, temp=79 F, clear
- Rate of spread <1 at 1200 hrs to 8 at 1500 hrs
- Flame lengths of 1-3
- Fuel type needles

## Willow Flowage - Indian Point Prescribed Burn Evaluation

Nicky Kempf and Sue Crowley
August 20, 2002

**Management Goals:**

Long Term: Maintain a managed old-growth native forest community with a dominance of red and white pine.

Short Term: Convert stands dominated by aspen and other short-lived species to red and white pine or long-lived species. Favor large diameter trees and old growth characteristics.

**Burn Objectives:**

Reduce the shrub and hardwood competition by at least 30% (red maple and hazelnut).
Reduce the duff layer in order to expose mineral soil for pine germination.
Achieve the latter 2 objectives without significantly damaging existing pine regeneration.

**Burn Evaluation Data**

- Plot size: 1/5 acre = 52.7 ft radius
- Plot location / description: sought to capture areas with varying degrees of shrub, hardwood, and pine regeneration densities
- Basal Area and Average DBH
- Average Scorch Height by species
- Percentage of Killed Vegetation, primarily in the understory by species
- Percentage of Duff Removed
- Percentage of Sprouting Occurrence
- Date of Burn: May 31, 2002
- Date of Evaluation: August 20, 2002

**General Conclusions of First Evaluation**

- 90% and greater kill of hazel component
- 20% kill of hardwood component
  -lower % for stems > 2" dbh AND greater % for stems < 2" dbh
- less than 5 % duff removed
- 90% and greater maple sprouts
- 15 % hazel sprouting
- Pine regeneration burned more than desired in *some* areas.
  **Overall a Success!**

**Future Considerations**

Attempt to burn areas with higher density of hardwood when the fire conditions are the strongest (i.e. low humidity, stronger wind, later morning to earlier afternoon) and likewise burn areas with higher density of pine regeneration when the fire conditions are the weakest. Obviously, these specific conditions are difficult to predict and to accomplish.

Andy Shaney was the Ranger on this burn

## Willow Flowage-Indian Point Prescribed Burn Evaluation

Date of Burn: May 31, 2002
Date of Eval: August 20, 2002
Plot Size 1/5 acre : 52.7' radius

Estimators: Kempf / Crowley

| | PLOT 1 | PLOT 2 | PLOT 3 | PLOT 4 | PLOT 5 | PLOT 6 | PLOT 7 |
|---|---|---|---|---|---|---|---|
| Plot Description: | Unburned; Small red & white pine; very little hardwood;some hazel. | Unburned: Small saw red pine with red pine saplings; little hardwood & aspen; very little hazel/hawthorne; | Burned; Small saw red pine; Some hardwood poletimber; hardwood seeds and saps 0-2";dense hazel; | Burned; Small red & white pine; abundant white pine saplings;some aspen poleitmber; very little hardwood poletimber & saplings; very little hazel; | Burned; Red maple saplings and poletimber; Some white birch poletimber; Scattered red pine small saw; abundant white pine saplings; moderate hazel; | Burned; Dominated by red maple clumps in north half; white pine poletimber in southwest quarter; little hazel; | Burned; Thick white pine approaching poletimber size; red maple clumps; little hazel; |
| Ave. DBH | 6 | 8 | 11 | 10 | 7 | 6 | 5 |
| Basal Area (BAF 10) | 90 | 110 | 140 | 120 | 110 | 90 | 100 |
| Ave Scorch Height | NA | NA | 1 foot | 1 to 2 feet | 1 foot | 2 to 6 inches | 2 inches |
| pine | | | 1 to 2 feet | 1.5 feet | 2 feet | 8 inches | 2 inches |
| hardwood | | | 4 to 6 inches | 4 to 6 inches | 3 inches | 3 inches | 2 inches |
| aspen | | | not present on plot | 3 to 4 inches | 3 to 4 inces (birch) | not present | not present |
| % of Kill | NA | NA | | | | | |
| *understory* | | | 60% to 65% | 90% | 35% to 40% | 40% | 20% |
| pine | | | 65% to 70% | 95% < 2" dbh | 30% to 40% | < 5% | 7% |
| hardwood | | | 50% to 60% | 0% to 5% | 15% to 20% | 30% | 7% |
| aspen | | | Not present | 0% to 1% | not present | not present | not present |
| hazel | | | 95% | 100% | 95% to 100% | 95% | 90% |
| *overstory* | | | | | | | |
| pine | | | 0% | 0% | 0% | 0% | 0% |
| hardwood | | | 0% | 0% | < 1% | < 1 % | 1% to 2% |
| aspen | | | 0% | 0% | not present | not present | not present |
| % of Duff Removed | NA | NA | 0% | 2% to 20% | 5% | 10% | < 3% |
| % of Sprouting | 0 | 0 | Red Maple: 95% Hazel 0% | Red Maple 95% Hazel 0% | Red Maple 95% to 100% Hazel 0% | Red Maple 100% Hazel 50 % | Red Maple 80% Hazel 25% |
| Notes | | | | Some scorching of overstory red pine from torching of understory white pine. | Some red maple (< 2" dbh) killled. | | |